WE CLAIM:

1. An iron based alloy having a surface or surfaces on which iron oxide whiskers of high aspect ratio are erected.

2. An iron based alloy having a surface or surfaces on which iron oxide whiskers of high aspect ratio are erected as claimed in claim 1. In the production of said iron oxide whiskers, a said iron based alloy is brought into contact with oxidative atmosphere so as to react the surface iron atoms with oxygen atoms brought into contact therewith at high temperature, thereby attaining growth as oxide whiskers.

3. A titanium based alloy having a surface or surfaces on which titanium oxide whiskers of high aspect ratio are erected.

4. A titanium based alloy having a surface or surfaces on which titanium oxide whiskers of high aspect ratio are erected as claimed in claim 3. In the production of said titanium oxide whiskers, a said titanium based alloy is brought into contact with oxidative atmosphere so as to react the surface titanium atoms with oxygen atoms brought into contact therewith at high temperature, thereby attaining growth as oxide whiskers.

5. An iron oxide whisker of 5nm to 2 μ m diameter and of an aspect ratio higher than 20, wherein the content of non iron metal atoms is less than 10 percent atomic volume.

6. An iron oxide whisker as claimed in claim 5、In the production of said iron oxide whiskers, a said iron based alloy is brought into contact with oxidative atmosphere so as to react the surface iron atoms with oxygen atoms brought into contact therewith at high temperature, thereby attaining growth as oxide whiskers.

7. A titanium oxide whisker of 5nm to 2 μ m diameter and of an aspect ratio higher than 5, where in the content of non iron metal atoms is less than 10 percent atomic volume.

8. A titanium oxide whisker as claimed in claim 7. In the production of said titanium oxide whiskers, a said titanium based alloy is brought into contact with oxidative atmosphere so as to react the surface titanium atoms with oxygen atoms brought into contact therewith at high temperature, thereby attaining growth as oxide whiskers.

9. A method of erecting oxide whiskers of a high aspect ratio on a surface or surfaces of an iron or titanium based alloy, which comprises bringing an said iron or titanium based alloy into contact with oxidative atmosphere so as to react the surface iron atoms or the surface titanium atoms with oxygen atoms brought into contact therewith at high temperature, thereby attaining growth as oxide whiskers.

10. A method of erecting oxide whiskers of a high aspect ratio on a surface or surfaces of an iron or titanium based alloy, which comprises bringing an said iron or titanium based alloy into contact with oxidative atmosphere so as to react the surface iron atoms or the surface titanium atoms with oxygen atoms brought into contact therewith at high temperature, thereby attaining growth as oxide whiskers as claimed in claim 9, wherein the growth of said oxide whiskers is hastened by a temperature gradient provided in an said iron or titanium based alloy.